

MODIFICATION RECOMMENDED –
CORRECTS MANUFACTURING OR DESIGN DEFECTS

E4424B-01D

S E R V I C E N O T E

Supersedes:
E4424B-01C

ESG “B” AP/DP Series RF Signal Generator

Serial Numbers: **E4424B 9999990101 – 9999990791**

**Defective Divider chip on the Frac-N/Divider board (A24)
displays Error 511 "Output unlevelled" and causes NO OUTPUT or
UNSTABLE OUTPUT below 1GHz.**

To Be Performed By: Agilent-Qualified Personnel or Customer

Parts Required:

P/N: E4423-60019 Description: Frac-N/Divider Assembly Qty. 1

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:		
MODIFICATION RECOMMENDED		
ACTION CATEGORY:	☐ IMMEDIATELY ☒ ON SPECIFIED FAILURE ☐ AGREEABLE TIME	STANDARDS: LABOR: 1.0 Hours
LOCATION CATEGORY:	☐ CUSTOMER INSTALLABLE ☐ ON-SITE ☒ SERVICE CENTER	SERVICE X RETURN INVENTORY: ☐ SCRAP ☐ SEE TEXT
AVAILABILITY:	PRODUCT'S SUPPORT LIFE	USED X RETURN PARTS: ☐ SCRAP ☐ SEE TEXT
AGILENT RESPONSIBLE UNTIL: August 7, 2007		
AUTHOR: MC PRODUCT LINE: 15		
ADDITIONAL INFORMATION:		

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Situation:

The ESG-B AP/DP Family of Signal Generators has been experiencing failures in the Frac-N board assemblies. This is due to a failure in the divide-by-eight circuit of the Divider chip A24U313 which causes the ESG to display Error 511 "Output unlevelled". All ESG-B AP/DP units with the serial numbers mentioned above may experience Error 511 along with UNSTABLE or NO OUPUT below 1GHz. If this occurs, the A24 Frac-N/Divider Assembly (E4423-60019) needs to be replaced. This assembly should be ordered using part number E4423-69019 and should be treated as a warranty repair. The defective assembly should then be returned with documentation referencing this service note as "Error 511".

Solution/Action:

The resolution plan consists of the following:

1. Repair on failure.
 2. Prevent future occurrences of Error 511 due to a defective divider chip(A24U313) by repairing the ESG-AP/DP in advance.
- When the ESG-AP/DP is returned for service or calibration, check the following:
- a) ESG-AP/DP's serial number falls within the above range.
 - b) Locate A24U313(on the component side near P3).
- Note the manufacturer name, part number, and date code.

Defective part

HP

1GC1-4210

xx/xx/xx

If a) and b) are true, replace the A24 Frac-N assembly. Otherwise no prevention is necessary. Good parts show "Agilent" as the manufacturer.

Good Part

Agilent

1GC1-4210

xx/xx/xx

Note: The removal and replacement procedures are listed below.

Replace all A24 assemblies that contain the defective part with p/n E4423-69019 and perform the following performance tests:

- DCFM Frequency Offset
- FM Frequency response
- Harmonics
- Internal FM Accuracy
- Internal FM Distortion
- Non Harmonics
- Phase Modulation Accuracy
- Phase Modulation Distortion
- Phase Noise
- PM Frequency Response
- Power Level Accuracy
- Residual FM

Ensure that the defective A24 Assembly is documented referencing this service note, re-assembled and returned.

Removal:

1. Remove Frac-N board assembly A24. (refer to "Daughterboard Card Cage Boards" replacement procedure in the service Guide).
2. Use the T-15 TORX screwdriver to remove the sixteen A24 cover screws. Remove the top and bottom covers.

Replacement:

1. Reassemble the top and bottom covers and torque screws to 9 in-lbs.
 - Make sure EMI gasket is properly fitted between covers--
 - Use care not to damage the circuit board--
2. Replace Frac-N board assembly A24. (refer to "Daughterboard Card Cage Boards" replacement procedure in the service Guide).

Verification:

1. Perform the performance test listed above using the Agilent ESG Software.